

H9FE : Fundamentals of Financial Econometrics

Module Code:	H9FE
Long Title	Fundamentals of Financial Econometrics APPROVED
Title	Fundamentals of Financial Econometrics
Module Level:	LEVEL 9
EQF Level:	7
EHEA Level:	Second Cycle
Credits:	5
Module Coordinator:	COLETTE DARCY
Module Author:	Isabela Da Silva
Departments:	School of Business
Specifications of the qualifications and experience required of staff	
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
#	Learning Outcome Description
LO1	Integrate and apply theoretical and practical knowledge of the core concepts and techniques in econometrics, with specific focus upon the classical linear regression model and the underlying statistical principles and concepts of regression analysis
LO2	Conduct independent econometric and statistical analysis of financial and economic data using the method and principles of the Ordinary Least Square criterion within the context of simple linear and multiple regression models.
LO3	Apply appropriate statistical testing of the underlying assumptions of linear regression analysis and hence reflect critically upon the model adequacy and correct for any regression disturbance issues (e.g. autocorrelation and heteroscedasticity).
LO4	Critically evaluate the tools of econometrics to estimation, inference and forecasting in the context of real world economic and financial problems.
LO5	Demonstrate proficiency in the use and application of software to conduct econometric analysis using real world financial and economic datasets and hence critique and interpret reported results in a technical and non-technical manner.
Dependencies	
Module Recommendations	
No recommendations listed	
Co-requisite Modules	
No Co-requisite modules listed	
Entry requirements	There are no additional entry requirements for this module. The programme entry requirements apply.

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Module Content & Assessment			
Indicative Content			
Introduction The Role of Econometrics in Financial and Economic Analysis Nature and Sources of Data for Economic/Financial Analysis Variable Types and Scales Regression versus Correlation			
Simple Linear Regression Model Linear Regression: Principles of Ordinary Least Squares Technique (OLS) The Classical Linear Regression Model: The Assumptions Underlying Regression Analysis Standard Error of Least Squares Estimates Using Regression for Predictions Testing Significance of Regression Coefficients			
Multiple Regression Model Assumptions underlying Multiple Regression Approaches to Building the Multiple Regression model Multiple Regression Analysis: Obtaining the OLS estimates R2 and Adjusted R2			
Hypothesis Testing in Multiple Regression Testing the Regression Coefficients Testing the Significance of the Multiple Regression Model: The F Test R2 versus F Test			
Regression Model Violations and Diagnostic Tests Issues in Regression Analysis Heteroskedasticity Autocorrelation Causes and Consequences Heteroskedasticity Autocorrelation Testing the Multiple Regression Model Heteroskedasticity (The Breusch Pagan Godfrey Test) Autocorrelation (Durbin Watson Test)			
Assessment Breakdown			%
Coursework			40.00%
End of Module Assessment			60.00%
Assessments			
Full Time			
Coursework			
Assessment Type:	Continuous Assessment	% of total:	40
Assessment Date:	n/a	Outcome addressed:	2,3,5
Non-Marked:	No		
Assessment Description: The continuous assessment will be empirical in nature and may take the form of a large-scale data-based project with prescribed tasks; a technical report or a detailed problem set based assignment which may contain case study data. Presentations may also be used in conjunction with any of the aforementioned assessment methods where appropriate. The continuous assessment element of this module will assess both theoretical and analytical skills as undertaken in the module and candidates must demonstrate skills of analysis and interpretation of data regardless of the form of assessment. Depending on the scale and nature of the task, this may take the form of a group assessment. An example of such an assessment would be where learners are asked to formulate an appropriate financial or economics led research question which requires the analysis of data. For example, testing a theory in finance and/or analysing economic behaviour. Learners are expected to: select and collect real-world data and hence undertake econometric analysis using appropriate software to answer the research question. Learners will be expected to critically evaluate empirical results, considering issues of model specification, assumption violation etc.			
End of Module Assessment			
Assessment Type:	Terminal Exam	% of total:	60
Assessment Date:	End-of-Semester	Outcome addressed:	1,2,3,4,5
Non-Marked:	No		
Assessment Description: The examination will be a minimum of two hours in duration and may include a mix of: short or long problem-based questions, vignettes, essay-based questions, and case study-based questions. All questions will be marked according to clarity, structure, contemporary examples (that illustrate points made), reference to materials covered, theories and research in the field. Reference to class material and evidence of outside reading is essential			
No Workplace Assessment			
Reassessment Requirement			
Repeat examination <i>Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.</i>			
Reassessment Description Repeat assessment of this module will consist of a repeat examination which will test all the learning outcomes.			

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Module Workload				
Module Target Workload Hours 0 Hours				
Workload: Full Time				
Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	Classroom and demonstrations	24	Per Semester	2.00
Directed Learning	Directed e-learning	24	Per Semester	2.00
Independent Learning	Independent learning	77	Per Semester	6.42
Total Weekly Contact Hours				4.00

Module Resources	
<i>Recommended Book Resources</i>	
Gujarati, D.N., (2021).Essentials of Econometrics. SAGE Publications.	
<i>Supplementary Book Resources</i>	
Wooldridge, J.M., (2020).Introductory Econometrics: A Modern Approach, 7th edt., Cengage Learning. Stock, J.H. and Watson, M.W., (2020).Introduction to Econometrics, 4th ed , Pearson Publications. DeFusco, R.A., McLeavey, D.W., Pinto, J.E, Runkle, D.E. and Anson, M.J, (2020).Quantitative Investment Analysis. Wiley Publications (Chartered Financial Analyst TM) (e-book available). Koop, G. (2013), Analysis of Economic Data, Wiley Publications. Davison, M. (2014), Quantitative Finance: A Simulation Based Introduction Using Excel, Chapman and Hall/CRC. Rivera, R, (2020), Principles of Managerial Statistics and Data Science, Wiley Publications.	
<i>This module does not have any article/paper resources</i>	
<i>Other Resources</i>	
[Website], The Economist, http://www.economist.com [Website], The Financial Times, http://www.ft.com [Website], The Wall Street Journal, http://www.wsj.com [Website], Bloomberg, http://www.bloomberg.com [Website], Reuters, http://www.reuters.com [Website], The Central Bank, http://www.centralbank.ie [Website], International Monetary Fund, http://www.imf.org [Website], European Commission (Eurostat), http://epp.eurostat.ec.europa.eu/ [Journal], Finance. [Journal], Quantitative Finance. [Journal], Quarterly Journal of Finance. [Journal], Economics and Finance. [Journal], Financial and Quantitative Analysis. [Journal], Mathematical Finance. [Journal], Computational Finance. [Journal], Current Issues in Finance, Business and Economics.	
Discussion Note:	